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**Subject:** Analysis of the occurrence of wind shifting in Boone Co. IA  
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Sujatha,

Gabe and I explored the shifting patterns for wind directions. We downloaded met data for Boone County, IA for the year of 2000 to spot check for such occurrences. In doing so, we restricted the data for times relevant for 2,4-D choline application scenario (i.e. April 1 to August 31) as well as included wind speeds between 2.4 mph – 15 mph as permissible by the label.

Here are the results:

For 4 minutes interval – 337 (0.15%) occurrences that the wind shifted 90° to 180°

For 12 minutes interval – 1164 (0.52%) occurrences that the wind shifted 90° to 180°

One other thing we did not look into the amount of times wind shifts occur during the day since applications occur during the day, which will require to get the sunrise/sunset tables for Boone County in 2000 to figure this out. Therefore, % of wind shifted 90° to 180° occurrences may change slightly.

The most common reasons for the wind shifts include frontal passages or shear zones produced by thunderstorms in the area. Both of these are often highly localized discrete linear and transient features in the atmosphere. Some of the wind shifts may have coincided with rainfall, however we do not have rainfall data at temporal scale of 1 minute.

Thanks

Faruque